Jan: 6 1829 No 24 C.
50 South Sixth St.

An Inaugural Essay
on
Indigestion
presented to the Medical faculty
of the University of Pennsylvania
for the degree of Doctor of Medicine
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Passed March 3
1829

January 6th 1829

— Indigestion —

Numerous and diversified, as are the diseases to which mankind are liable, we find none that in its continuance produces more deplorable consequences, than that known, under the name of indigestion — This too frequently arises from its not having been sufficiently attended to, in its incipient state, for its progress is so gradual, as scarcely to excite the alarm of the patient, until it has taken firm hold of the system — If we consider the organ in which it is situated, and its importance in the animal machine, it will seem, that any, even the slightest disorder of function in it, will if protracted, affect the whole economy — In making a few remarks on the above disease, I merely repeat the observations of others, whose practical experience on the subject, would appear to render them proper guides — Digestion may be said to consist, of that series of actions, which take place either simultaneously, or successively, in the alimentary canal, the food undergoes numerous changes, from its first being taken into the mouth, and masticated,

until its arrival at the large intestine, from which it is transported and expelled. The changes that aliments undergo in the stomach, had long perplexed the ancients, and the whole force of their ingenuity was turned to the explanation of this single point, their excited imaginations gave rise, to numerous fanciful hypothesis, each exceeding the other in extravagance. one sect maintained, that the food underwent putrefaction in the stomach. Hippocrates attributed digestion to coction, effected by an elevated temperature, and Galen endowed the stomach with numerous powers, in order to explain the mystery of the process. In more recent times, Reaumur was the first, who endeavoured to show in a satisfactory manner, that the changes which the food underwent, must be accomplished by some fluid agent, which acted in the manner of a solvent. His experiments on the subject, had a great influence in altering the physiological doctrine of digestion. The existence of a fluid termed gastric, was generally admitted, and many investigations were instituted, for the

purpose of ascertaining its qualities - it is remarkable for its antiseptic, coagulating, and solvent powers. Mr. Hunter found it capable of corroding the coats of the stomach when they were deprived of life. Dr Fordyce found that the most putrid meat, after remaining a short time in the stomach of a dog, became perfectly sweet. Dr Stevens procured an individual who would swallow silver balls, these were perforated and contained different kinds of food, he perceived that they were all acted on, but in various degrees according to their previous preparation, thus raw animal matters, were not so much affected, as when roasted or boiled, the vegetable grains had altered, becoming only moistened, and broken. In the natural process of digestion, the food after entering the stomach, is converted into chyme, this passing into the duodenum, is mixed with the bile and pancreatic fluids, by which it is converted into chyle, the nutritious part of this, is absorbed, the excrementitious following the course of the intestines, is thrown out of the system - Digestion, cannot be considered as a

chemical process, but as a vital operation, this is evident from all its phenomena. The stomach may be viewed, as the great regulator of the whole system, which when paid due regard to, and kept in its proper state, is the organ of nutrition, but when violated by offending materials, it throws all into utter confusion. There is no organ of the body which is not directly or indirectly affected by the operations of the stomach. Its sympathies are so numerous, and its influence so extensive, that at one period it was regarded as the seat of the soul. Its sympathies with mental impressions, are remarkable, sickness ensuing, on the sight of unpleasant objects, and grief, often occasions total loss of appetite. With regard to its influence, over other functions, an instance of its effects, may be seen in hunger, muscular strength being diminished, the action of the heart is opened, and respiration rendered imperfect. an immediate change ensues, when food is taken in, this cannot be from the nourishment extracted, the effect being too sudden, but merely, by the impression, made

on the stomach. In short, there might well be imagined an independent and directing principle, to reside in the digestive organs. The diseases of these organs are a class of complaints, that affect our moral as well as our physical nature, the body and mind suffering nearly in an equal degree. Diseases of the alimentary canal are more frequently to be observed, in the higher walks of life, where from a luxurious mode of living, and want of active exercise, the powers of the constitution become enervated. Indigestion, had been defined to be a chronic disease, in which one or more of the several processes by which food is converted into blood, are imperfectly or improperly performed, in consequence, either of functional aberration, or organic lesion. When the qualities of agents concerned in healthy digestion, do not act on the food in the usual manner, the contents of the stomach may remain unchanged, but ultimately is decomposed, the sooner or later, depending on the nature of the substances taken. The alimentary canal's under these

circumstances produces very different effects on the organs in which it is contained and on the system generally and which does not take place when the stomach is occupied by healthy chyme. In considering the causes which give rise to disorder of the digestive function, it is necessary to avert to healthy digestion - food when received into the stomach undergoes its conversion into chyme by the combined action of the chemical power of the gastric juice and the mechanical movements of the stomach. The secretion of the gastric fluid seems to be wholly dependent, on nervous influence this conclusion is drawn, from the numerous experiments which have been instituted on animals, with regard to the division of the eighth pair of nerves - now, the disorders of the alimentary canal, may be induced by whatever acts to produce a derangement of the secreting power + so that the food does not undergo the necessary changes or by whatever debilitates the stomach + so that the food is not brought in contact with its muscular coat - consequently cannot be properly prepared. As in affections of the stomach, much pain

of the system become implicated in its derangements, so it in turn, is made to feel the effects of their disorders. as debility of the skin which may have been produced by indigestion, reacts on the stomach and is one of the means of keeping up the disease, from which it derived its origin. The principal cause of indigestion, may be referred to errors in diet, sometimes, from excess in quantity at others from defect in quality, but of the two the former is the most frequent. The system requires a certain quantity of food, for its healthy nourishment, and in consequence of this, the digestive fluids will act on but a limited mass, this varies in different individuals also in the same person, at different times, all beyond this, undergoes common chemical changes, or is the means of exciting morbid sensations. The quality and quantity of food, is little suspected, of the injury resulting from it, because individuals daily transgress, without suffering, but at last, the same food, which had so long been taken, with impunity, begins to create the

most uncomfortable sensations, and these being unheeded disorder of function, is the consequence. The physiological action of food, and drink, is shown more on other organs and parts, than on the stomach itself, when the quantity taken has been moderate, and the quality simple a general sense of refreshment, and vigour, is experienced over the whole body, at the same time no distinct sensation is perceived in the stomach, so far all goes on well. On the contrary, if improper food has been taken or too much, even of what is simple the stomach in endeavouring to free itself from the load makes us sensible of a feeling of distension, attended at times, with a degree of depression of spirits, and irritability of temper, giving the first indication of indigestion, so that whenever a distinct sensation is called forth in the stomach, or the food is followed by excitement of the system, and an inaptitude for mental or corporeal exertions the rules of health have been transgressed, and the foundation of disease about being laid. The use of narcotic and

other substances for a length of time will be productive of indigestion, as strong coffee or tea, tobacco, opium, the too frequent repetition of medicines debilitates the muscular fibre; large quantities of fluids is said to be sometimes the cause of dragging on an attack of the stomach - but one of the most frequent is stated by Wilson Philip, to be morbid distension of the stomach which by overstretching the muscular coat, prevents it from acting on its contents - the muscular powers, are excited too suddenly, and too forcibly, the distention not being gradual. The most common cause of morbid distention is eating too fast, for the appetite only subsiding, as the food combines with, and neutralizes the gastric fluid, already in the stomach, time, is not given, for this combination to take place, so that more food is received, than the quantity of gastric fluid, which the stomach is capable of furnishing, during the digestive process will be able to effect, a due alteration in. Morbid distension is also caused, by the stimulus of highly seasoned food that which pleases the palate, and in-

distension continue eating after the calls of hunger have been satisfied — the degree of distension, depends much on the character of the food some kinds more than others, and that kind of alimentation, most. Distension, acts not only on the muscular fibre but on the nerves of the stomach thereby causing ~~pain~~ pain, asthma, and oppression. There are some causes, that act immediately, on the nervous system, and secondarily on the muscular as violent passions of the mind, great anxiety, intense mental abstraction strong mental impressions, often at once, destroy the appetite. It is related of Van Helmont, that going to dine with a friend, he dislocated his ancle, when, his appetite, immediately left him. The bone being replaced in a pain returned, the loss of appetite, ceased to exist have been the effect, of bodily impression, for the pain continued, even after the operation. Indigestion, may be produced, by the diseases of other organs, as of the spleen, liver Pancreas, &c so extensive, are the sympathies of the stomach that whatever, tends to disturb the function, of

any important organ, may be considered among the causes of indigestion. The period of life from, nearly to, forty presents the most numerous cases of derange of the digestive organs. The symptoms of indigestion - these have been divided into several stages as marking its progressive advance - the symptoms first observed are such, as are given rise to, from the irritation occasioned by undigested aliment, - after a full meal, there is oppression at the pit of the stomach, or a sense of pain, flatulence, sour eructations, sometimes nausea and vomiting - these may continue for a certain length of time, without in any other way, sensibly affecting the functions of the system, and the powers of the stomach, may be mitigated, by avoiding the offending substances and proper attention to diet, but the above symptoms continuing, to recur, other parts of the alimentary canal, begin to suffer - the secretions, are not as healthy as formerly - The taste is disagreeable, mouth clammy, and tongue loaded, especially in the morning, with a yellowish, or dirty white fur, a sense of thirst,

the appetite, is generally more or less impaired, and variable — and there is a distressing feeling of debility this is a characteristic feature of the disease. Johnson remarks, that it is more a sense of debility than real, the least exertion causes an inability for muscular action, and depresses the spirits of the patient, yet this feeling wears off, when the food passes from the stomach it is, therefore a sympathetic debility, from morbid irritation in the alimentary canal. The mind participates, in the languid state of the body, and is not equal to its usual efforts — the sleep is disturbed by unpleasant dreams, and occasionally by fits of nightmare. The colour of the discharges from the bowels, becomes changed a saffron tinge from the altered state of the bile. The urine, flows sometimes in large quantities, cloudy, and often deposits a sediment, its increased quantity, seems to depend, on a failure in the action of the skin. None of the senses are more frequently sympathetically affected, than hearing, and sight, noise in the ears and partial deafness, when the function of

digestion is disordered; may often lead to a suspicion of the latter, when the ordinary symptoms of indigestion, do not present themselves. The organs of vision, likewise suffer, there is an indistinctness of sight; uneasiness of the eyes, when exposed to a strong light. From the intimate sympathy between the stomach and brain, any derangement in the digestive organs, usually communicates its influence to the brain. The headache arising from indigestion, is divided by Dr Cowan into two kinds, the first has reference to a fault in the stomach, the second to a defective action in the upper bowels. In the accommodation of the more severe cases, there is often a viscid frothy secretion, from the fauces and the mouth, clear than usual. The patient is always endeavouring to throw up his matter after his meals. The skin becomes dry shrivelled, and almost scaly, and the patient is sometimes haunted by a dry irritating cough. The second stage of indigestion, Dr Philipps remarks, is characterized, by a tenderness of the epigastric region, when pressure is made, and

if the pulse be examined in a peculiar manner, it will be found to be hard, and resistant, there being considerable tension is great languor and inability to exercise. In the second stage, the sympathetic affections, begin to assume a more decided character being at first merely nervous, and ceasing as soon as the cause by which it has been produced is removed, but soon; it becomes more permanent, and independent of the original disease, and requires an appropriate mode of treatment. It is stated in the Philos. Trans. any continued nervous irritation, at length terminates in metamorphosis, and or pain derangement of the part affected, in addition cases in support of the positive - in a certain pain in the shoulder at ~~last~~ ~~xxxx~~ ~~xxx~~. not no disease or in the pain being merely sympathetic, it is owing on the pain in the shoulder at last becomes fixed. When any sympathetic disease becomes firmly established, the original symptoms are mitigated, and sometimes wholly suspended, but if the new disease be one of sympathetic instead of chronic

it often aggravates them. The third and last stage of In-
-digestion, is that in which organic disease has occurred.
Some organ more immediately connected with the digestive
functions, will more readily undergo a change of structure,
on account of the, contracted irritation, then must have
sustained then those in succession connected in the tract in
question. When irritation, has continued to harass the
stomach for some time it's mucous coat becomes turned thick
gid with blood and consequently ulcerated. Mr Abercrombie says
these appearances are most characteristic in the large intes-
-tines, and accounts for it in this way if the digestion is
incomplete the food is liable to undergo, a chemical change,
and the gas which in this state is most irritating, to the
large intestines and on them, its injurious effects, will be
most likely to be evinced. It appears from the causes enu-
-merated, as giving origin to indigestion, that our food is
not one of the least fertile sources, therefore in concluding
the treatment to be pursued in the diseases of the digestive
organs, it will be proper in the first place, to take into

consideration the subject of diet the various kinds and their different terms of digestibility. The necessity of regulations in diet has been enforced from the fact that man is omnivorous and that there is scarcely any animal or vegetable that has not been used by some nation without inconvenience. One lives exclusively on roots and another on raw fish and others again, on a mixed diet. But daily experience and observation teaches that the food which man is suited to one constitution may not agree with that of another. It will seem from the chemical and mechanical processes to which the food is subjected upon its conversion into chyme, that its digestibility, is as much dependent on mechanical as its chemical composition. The healthy stomach, digests most readily and effectually, solid food of a certain density if it exceeds this it will require a greater length of time and more action, more to combine its chymification approaching too nearly to the consistence of gelatine the stomach tires or intended in its operations, that degree of consistence that is suited to digestion can only be known by attentive observation. Tough, crescent, and oily

articles of food, is the most difficult of digestion, the most opposed to this, is beef for instance, composed partly much of animal food, and also bean of animal substance, the flesh of old, is said to be more easily digested than that of young animals, which contains a greater quantity of mucilage. Mutton always is found to leave behind some of consistence in the stomach. Beef is also easily digestible, but rarely nutritious. The breast most mixed with fat is wholesome. Pork, quite much should be avoided, also veal and lamb. The lean, dark of venison, is one of the best articles of diet of game, those which are designated as white fowl are best. The flesh of wild animals is better than that of tame. Soup has also with gelatine and other gelatinous matters although containing the elements of nutriment, are not digested without considerable difficulty, by their loading the powers of the stomach, & their tenacity hindering the absorption of the thin parts. Those articles that are imperfectly acted on by the gastric juice, will be difficult of digestion, hence new bread is particularly objectionable. Schmucker, mentions the case of two soldiers, who had

value immoderately of it — they complained of uneasiness at the stomach — nothing succeeded the abdomen became hard & tumid the mental faculties & health suffered — of the animal substances, milk, comes first & this abounds with considerable nourishment, it is easily assimilated, & therefore affords a quick supply of nutriment to the system, & does not excite that degree of vascular action, which is produced by other animal matters — In the regard to drinks, water seems to be evidently the fluid, intended for the proper dilution of our food, & to assist in its digestion, by affording the necessary degree of moisture, too much fluid by diluting the gastric juice retards in fact this operation — The quantity of liquid taken at one into the stomach, is a matter of material consequence — The best criterion for the quantity to be used, is the sensation of the patient himself, never taking more at once, than is necessary to allay his thirst — There is a difference of opinion, with respect to the proper temperature of drinks for dyspeptics, it is often necessary to raise them to the standard of the body, for the stomach not having vital en-

ness to heart, in it, with the sudden impression of cold, might fall into a state of collapse. but fluids should be warm, from their stimulus although they afford present relief, are usually followed by subsequent debility. The habit of taking small quantities of food at a time & that frequently is said to be decidedly injurious, the natural growth of digestion is destroyed & the healthy action of the stomach, as evinced by the return of regular appetite, is entirely prevented. Three meals in the twenty-four hours, is recommended, in the interval in which, nothing should be taken. There are some cases of great debility, where the stomach is not able to bear a sufficient degree of food, to observe the regular interval between meals, as due nourishment might not be received, but in every case regularity should be attempted, as soon as possible, as to the proportion of food that is may be proper for an invalid to take. Dr Philips says, that the dyspeptic should attend to the first dawning of satiety. there is a moment, when the relish given by the appetite ceases a single mouthful, taken after this

appear as a weak stomach if we eat slowly, and carefully attend to this feeling, the stomach will never be overloaded. of exercise, this when moderate is of essential service to the dyspeptic invalid, but certain cautions are to be observed, viz: that exercise for an hour or two, after meals, should be refrained from as it creates a feeling of uneasiness - exercise of the mind, is also as necessary, as that of the body for the former is usually languid, when the latter is in any way disordered, in exercising, either body or mind, fatigue should never be induced - For the medicinal treatment of indigestion - The first object to be attained, when called to a patient labouring under the symptoms of a loaded & offended stomach, is to remove the offending materials, this must be done by an emetic which may be followed by some mild aperient. The alimentary canal must be cleared of all foul congestions, & their future accumulations prevented, first by a strict adherence to a diet most likely to induce the digestion of the food and secondly by the careful exhibition of laxatives which may carry off the superfluous parts - all saline & drastic aperients,

should be avoided. Red Peruvian bark, on account of its tonic qualities has been much used. When acid eructations occur, the best corrections, will be found to be the alkalies, magnesia, lime water, & prepared chalk. The stomach must be cleared by a better secretion, by the use of gentle stimulants, the distilled waters, mixed with some aromatic, incline to its correction, to alter the morbid properties of its contents. When shaken, prevents the action in the bowels, the combination of opium with an aperient, will promote its operation. Vomiting, is to be checked by the saline mixture, this not proving effectual, a pill of opium & camphor may be given, & blistering the region of the stomach. When the disease is confined to the stomach & bowels, those means must be adopted to that end & reduce them to their natural tenour, the most powerful in these, are astringents, perhaps a power of invigorating the digestive organs. Those in common use are the chamomile, gentian, calcumba, columbo, peruvian bark. Astringents, are useful by being more or less, tonic in their effects, one of the best of these, is the carbonate of iron, in combination with bitters,

and aromatics. Sulphuric acid, is deservable, in those cases where sweating is easily induced, by exercise, indicating, relaxation of the skin. Of the mineral acids, perhaps tonic power. The white oxide of Bismuth, has been much extolled. The bowels must be kept in a soluble state, by the use of mild aperients. An infusion of senna, graduated in strength according to the circumstances of each particular case, & combined with small doses, of some neutral salt, is a good formula. Purgatives, that act with violence, are calculated to increase the morbid irritability, by which the disease is nourished, & are usually followed, by an aggravation of the symptoms. Dr Abercrombie, says, that one should purge without having the bowels cleared, of the fecal matter contained in them, from this, a principle has been laid down in the administration of purgatives, that the excitement is to be repeated, till the diuretic action is induced, yet no single excitement, ever such, as must have an irritant to the organs. The external application of heat, to the region of the stomach, with other alterat

of this irritation that depends on the presence of indigestible matter. Friction, applied by means of the flesh brush to the abdominal region is said to be very serviceable. Often a change, begins to appear in the alvine discharges, get known by their appearing an unnatural colour. There is in addition to the original disease some derangement in the function of the liver to combat the morbid state of this organ, or use medicines in conjunction with those, that give strength to the alimentary canal. The medicine chiefly relied on for this purpose is mercury. It should be given in such quantities as to produce mercurial effects on the system. It is usually administered either in the form of calomel or blue pill. The former is more irritating than the latter. The blue pill is therefore used when it is necessary to use a mercurial, in order to remain any length of time, in the mouth, then a longer period may be taken than in the former. When the symptoms continue obstinate covering the parts with a warm mercurial plaster, tends to remove the

disease. The dandelion, is recommended as an aperient to mercury, but in large doses it proves oppressive to the stomach. When symptoms of an inflammatory nature superveene, indicated by the tenderness of the epigastric region, & hardness of pulse, the stimulating medicines are to be used with caution, & the antiphlogistic become necessary. The application of leeches, to the tender part of the epigastrium, after which, a blister to the part from which the leeches were taken, affords considerable relief. To lessen the inflammatory action, nitrate of potash, largely diluted with water, has been highly recommended. A free use of aperients, is now required. Change of air, is one of the most efficacious methods, of curing dyspeptic complaints, the advantages which attend it, have been ascribed, to the exhilarating impressions produced on the mind, & the change of habits which usually take place, on such occasions. Finally, more benefit, may be expected to arise, in dyspeptic complaints, from a judicious regulation, of the diet, & habits, of the

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patients, than from the best application, of mere drugs -
The chief reliance should be placed on the former, while
the latter, should be considered as useful, tho' commonly,
feeble auxiliaries.